

Attorney Docket: MIO 0018 V2/96-1138.03

CLAIMS

- Sub 67
1. A semiconductor device precursor comprising:
a substrate;
a layer of dielectric material formed on at least a portion of said substrate;
a layer of conductive material formed within said layer of dielectric material; and
5 a layer of hard mask material formed on at least a portion of said layer of dielectric material; at least a portion of said layer of dielectric material and said layer of hard mask material each having openings therein defining a via, said via exposing at least a portion of said layer of conductive material; said layer of dielectric material including a pair of shoulders having hard mask material thereon, and said layer of hard mask material having a pair of facets.
- 10 2. A semiconductor device precursor as claimed in claim 1 in which said layer of hard mask material includes a layer of etch resistant material thereon.
3. A semiconductor device precursor as claimed in claim 1 wherein said hard mask material is selected from the group consisting of tungsten, tungsten silicide, polycrystalline silicon, titanium, titanium nitride, titanium silicide, and titanium-tungsten alloys.
- 15 4. A semiconductor precursor device as claimed in claim 1, wherein said layer of conductive matter contacts at least a portion of said substrate.
5. A semiconductor device precursor comprising:
a substrate;
a layer of dielectric material formed on at least a portion of said substrate;
20 a layer of conductive material formed within said layer of dielectric material;
a layer of hard mask material formed on at least a portion of said layer of dielectric material; at least a portion of said layer of dielectric material and said layer of hard mask material each having openings therein defining a via, said via exposing at least a portion of said layer of

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conductive material; said layer of dielectric material including a pair of shoulders having hard mask material thereon, and said layer of hard mask material having a pair of facets; and an interconnect material in said via.

6. A semiconductor device as claimed in claim 5, wherein said hard mask material is
5 selected from the group consisting of tungsten, tungsten silicide, polycrystalline silicon, titanium, titanium nitride, titanium silicide, and titanium-tungsten alloys.
7. A semiconductor device as claimed in claim 5, wherein said hard mask material comprises a titanium-tungsten alloy.
8. A semiconductor precursor device as claimed in claim 5, wherein said layer of conductive
10 matter contacts at least a portion of said substrate.